Introduction

The Landsat Data Continuity Mission (LDCM) builds on a rich legacy of service to society. LDCM is the eighth satellite in the Landsat series and will be renamed Landsat 8 after launch. The mission will extend the more than 40-year-long Landsat record of Earth's continental and coastal landscapes. Since the launch of Landsat 1 in 1972, Landsat satellites have become an integral part of many operational land management activities. Landsat satellites provide decision makers with key information about the world's food, forests, water and how these and other land resources are being used.

This information helps forest managers decide how to allocate resources to restore a landscape after a wildfire, respond to insect infestations or disease, and slow deforestation. It helps state water managers identify sources of pollution related to land use. In western states, Landsat data shows water agencies how much water is being used to irrigate crops. Landsat images help agricultural agencies forecast crop production both nationally and globally. The launch of the LDCM satellite ensures that Landsat data will continue to enable these applications and to improve everyday life in a myriad of other ways.

LDCM carries two instruments, the Observational Land Imager and the Thermal Infrared Sensor, that together observe the same wavelengths of light as earlier Landsat satellites, but add two new "bands." These bands observe new parts of the electromagnetic spectrum that will improve cloud detection and observations of near-shore ocean chlorophyll. Additional, the single thermal infrared band sensed by previous Landsat instruments is split into two thermal bands to help improve sensitivity to surface temperature. LDCM also improves the radiometric quality of the imagery, for example by increasing the number of bits used to represent each pixel value in an image.

The continuity of observations and the technological improvements ensure that LDCM meets the needs of Landsat's many user communities long into the future.

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